

# **“ Fifth annual” One Medicine symposium**

**Globalization and emerging risks:**

**a one medicine approach to a changing world**

**Durham, NC, 12<sup>th</sup> December 2007**

## **International Health Regulations A response to global threats**

*Kamel Senouci, MD, MSc*

*Pan American Health Organization / World Health Organization*

*From Guénaél Rodier, Director, IHR Coordination, WHO, Geneva*

# A Changing World

- **Population growth**
- **Population ageing**
- **Population movements**
- **Urbanization**
- **Biotechnologies**
- **Food processing**
- **Globalized trade**
- **Access to remote biotopes**
- **Industrial pollution**
- **Climate change**
- ...



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# A Changing World

- Collapse of public health infrastructure
- Ineffective vector control programmes (WNV, Malaria, Chikungunya...)
- Development of antimicrobial resistance (e.g. XDR-TB)
- Worries about accidental or deliberate release of biological, chemical, or nuclear, agents
- ...



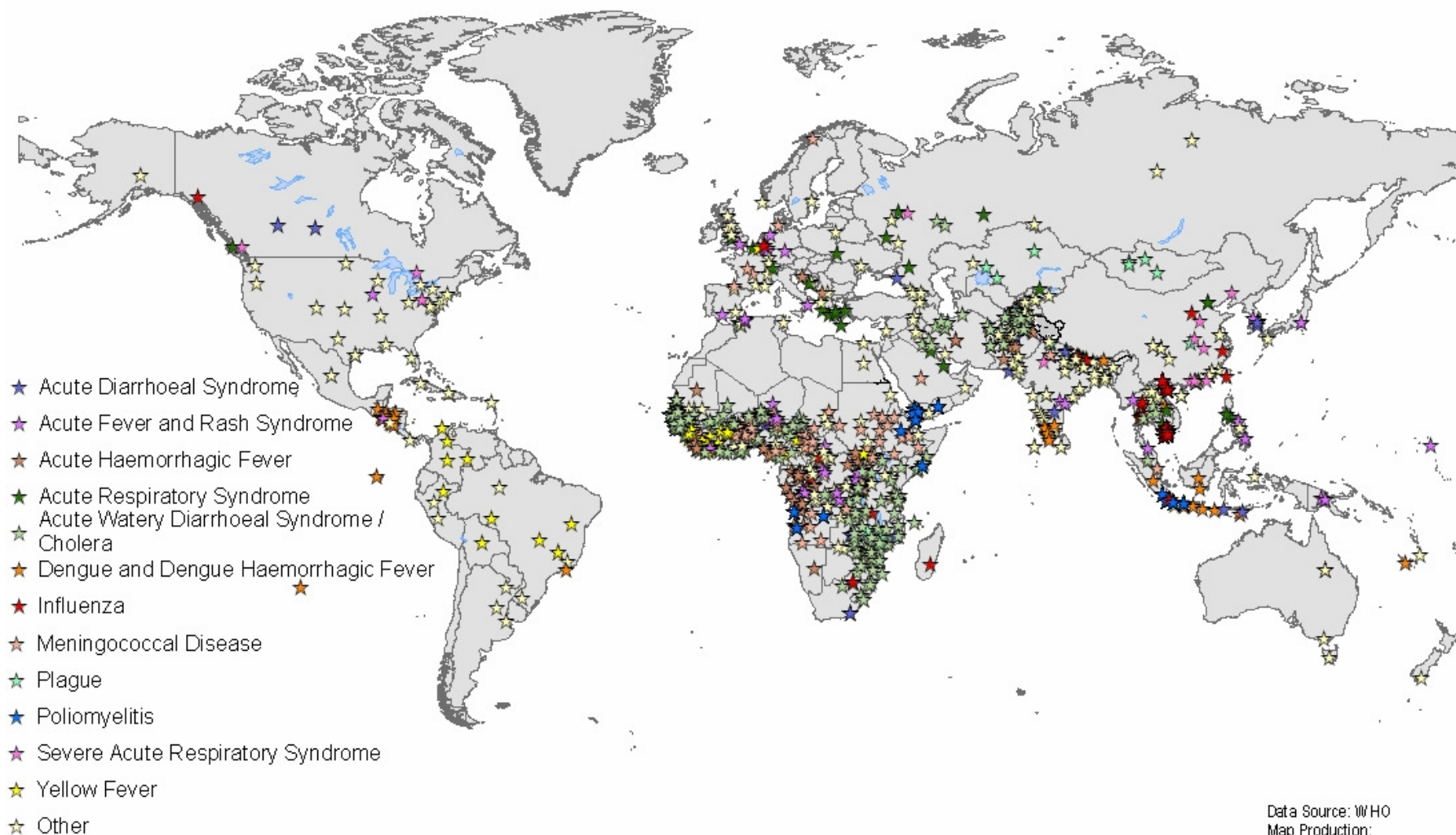
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## Events of potential international public health concern, January 2001 – June 2007 (n=1976)



Data Source: WHO  
Map Production:



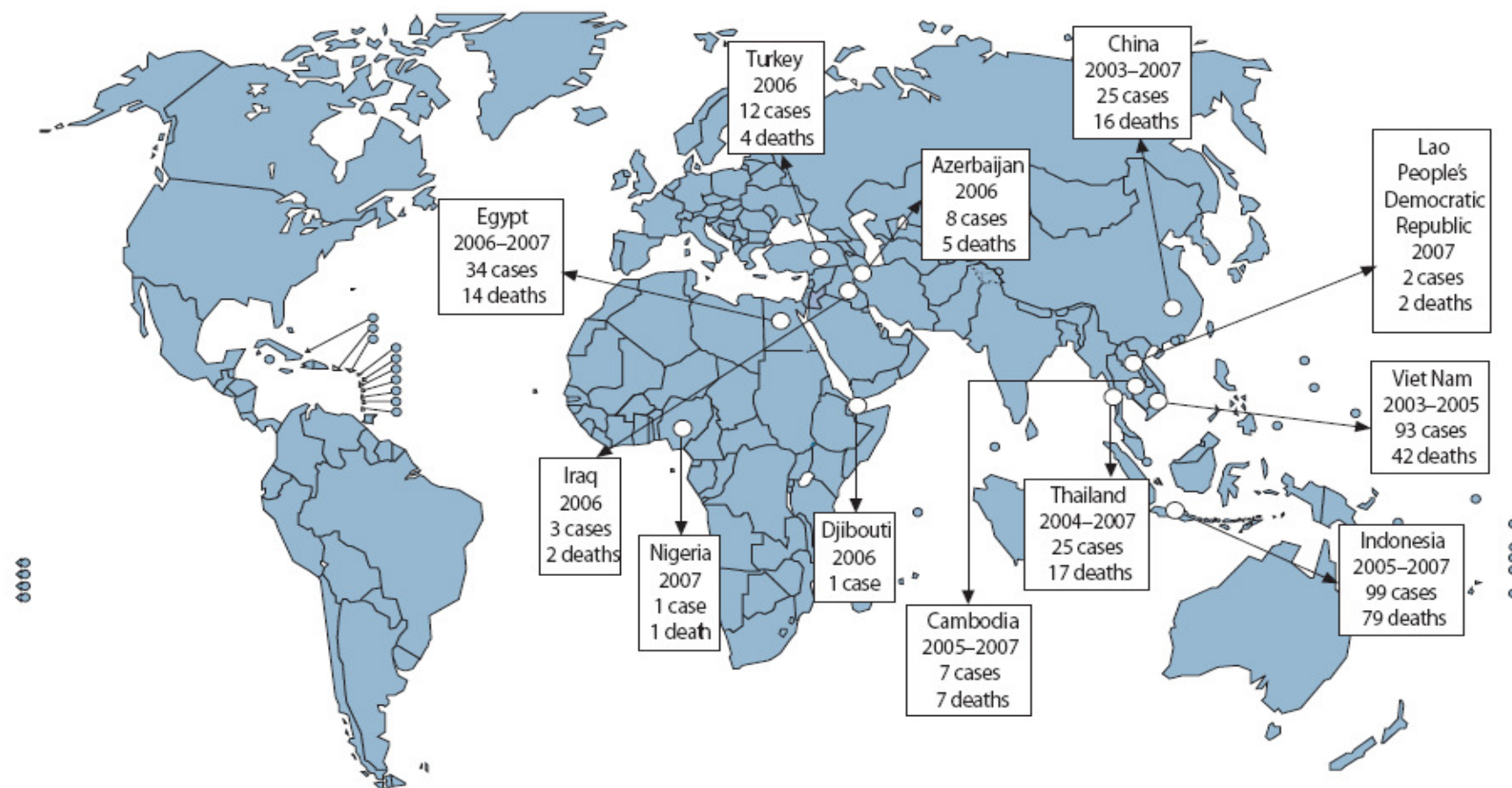
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## Cumulative number of confirmed human cases of avian influenza A/(H5N1) reported to WHO since 2003



Total number of cases includes number of deaths.  
 WHO reports only laboratory-confirmed cases.  
 All dates refer to onset of illness.  
 Data as of 6 June 2007.



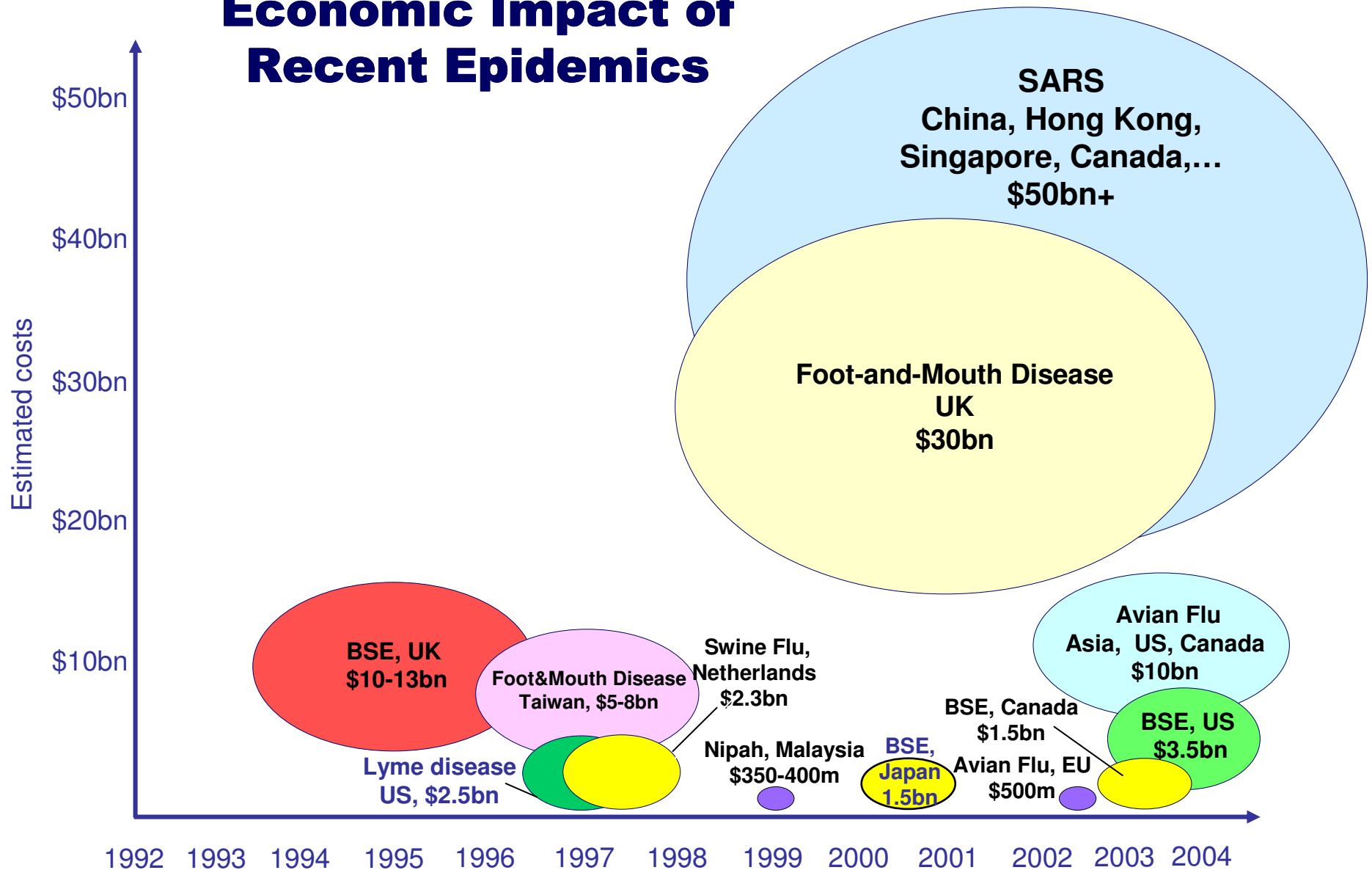
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# Economic Impact of Recent Epidemics



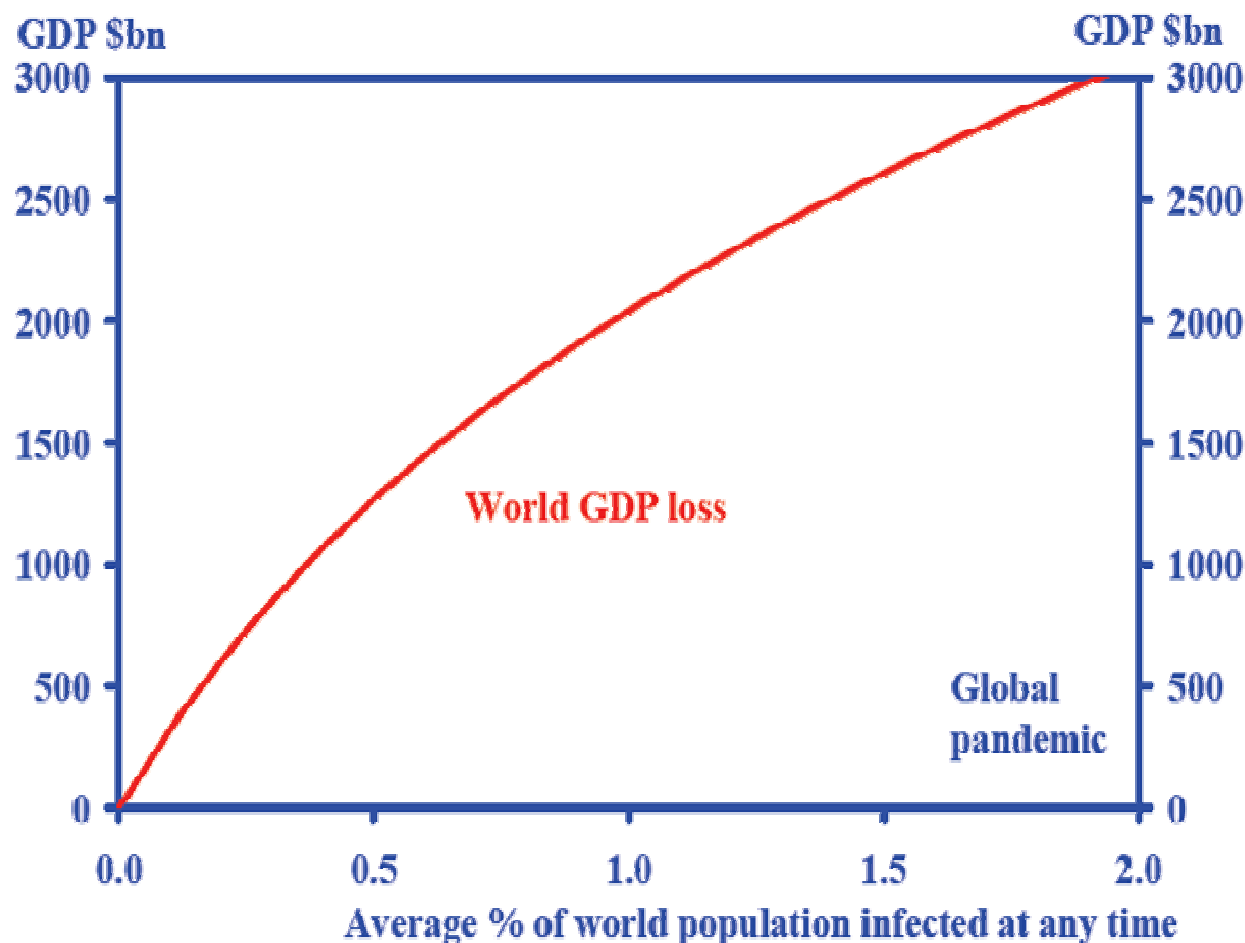
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# Estimated Economic Impact, Pandemic Influenza



Source: Oxford Economic  
Forecasting Group



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# International Health Regulations (2005)

From control of borders to [also] containment at source

From 3 diseases to all public health threats

From preset measures to adapted responses

IHR(2005) entered into force on

**15 June 2007 (or 18 July 2007)**



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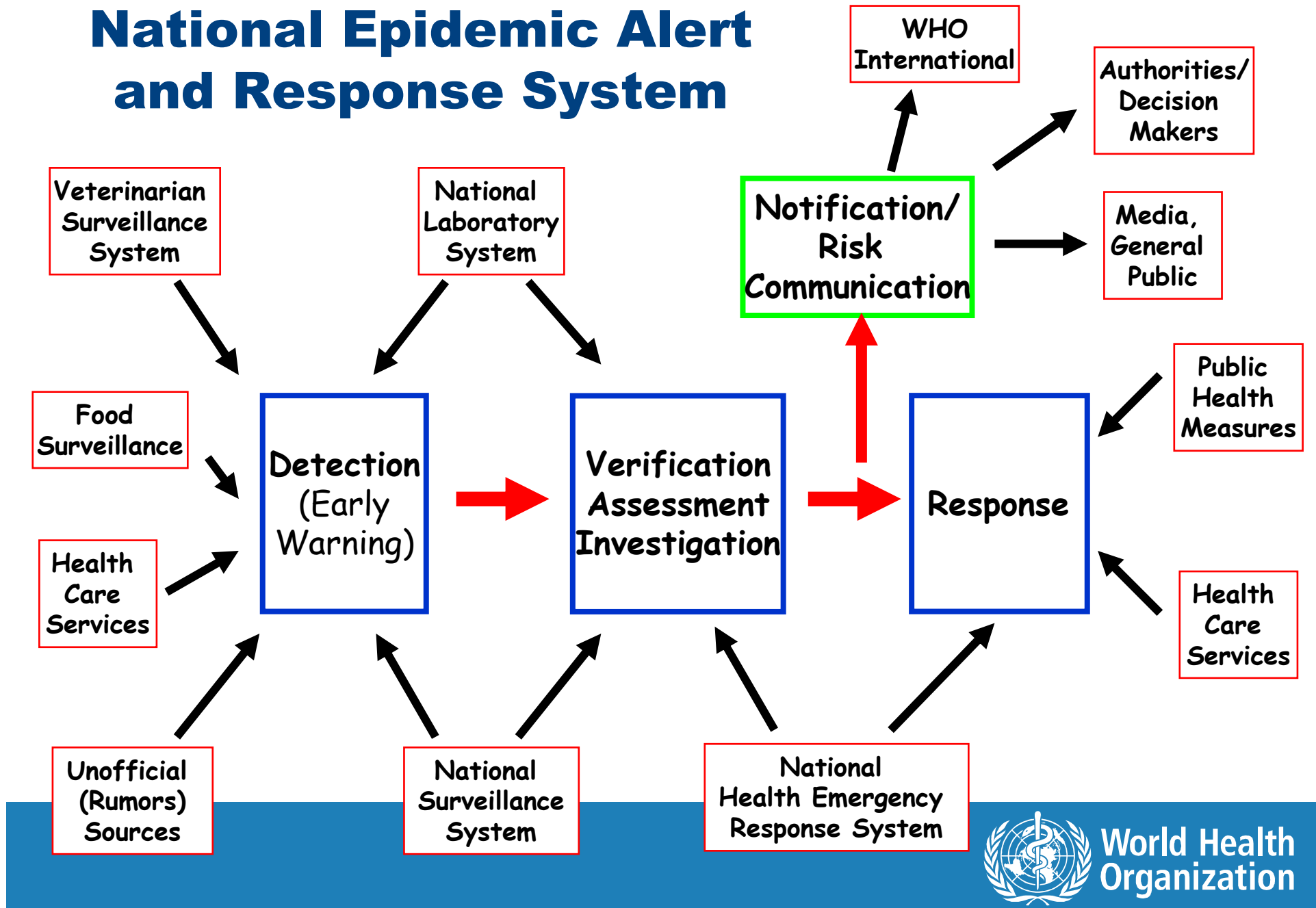
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# What Countries Must Do: **National Focal Point**

## ▶ **OBLIGATIONS**

- ▶ **Remaining accessible 24/7**
- ▶ **Sending urgent communications to WHO IHR Contact Points**
- ▶ **Consolidating inputs and disseminating information to relevant sectors - points of entry, public health services, clinics and hospitals and other government departments**

# The Role of the National Epidemic Alert and Response System



# What Countries Must Do: **National Core Capacities**

- ▶ **Assessment of events**

- ▶ **Using the annex 2**

# **IHR(2005) Decision instrument**

**Events detected by national surveillance system**

**Smallpox  
Polio wild-type  
HI new subtype  
SARS**

**Any event  
potentially  
PHEIC**

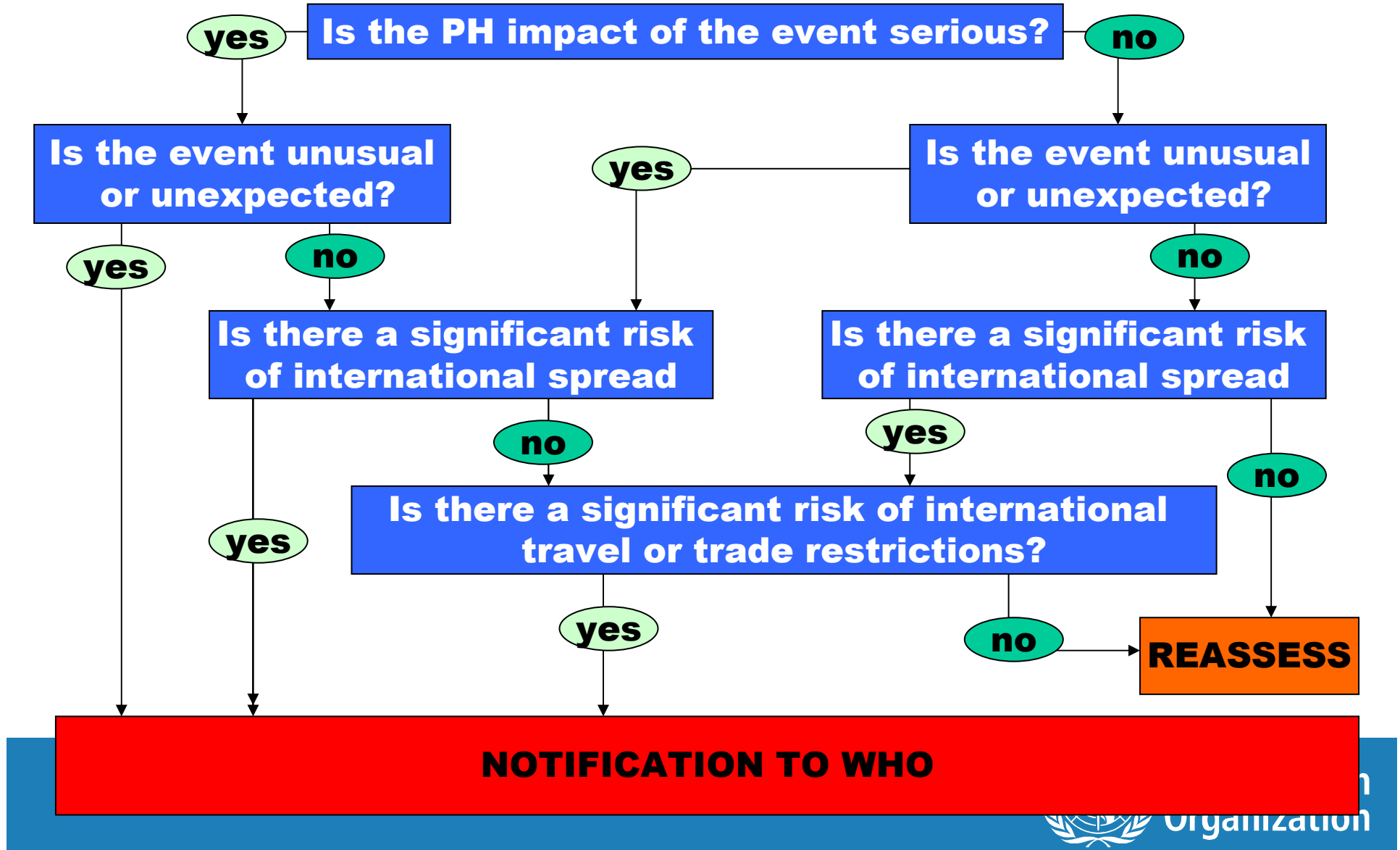
**Cholera  
Pneumonic plague  
YF, VHF, WNF,  
  
Diseases with  
national/regional  
concern**

**4 criteria for risk assessment**

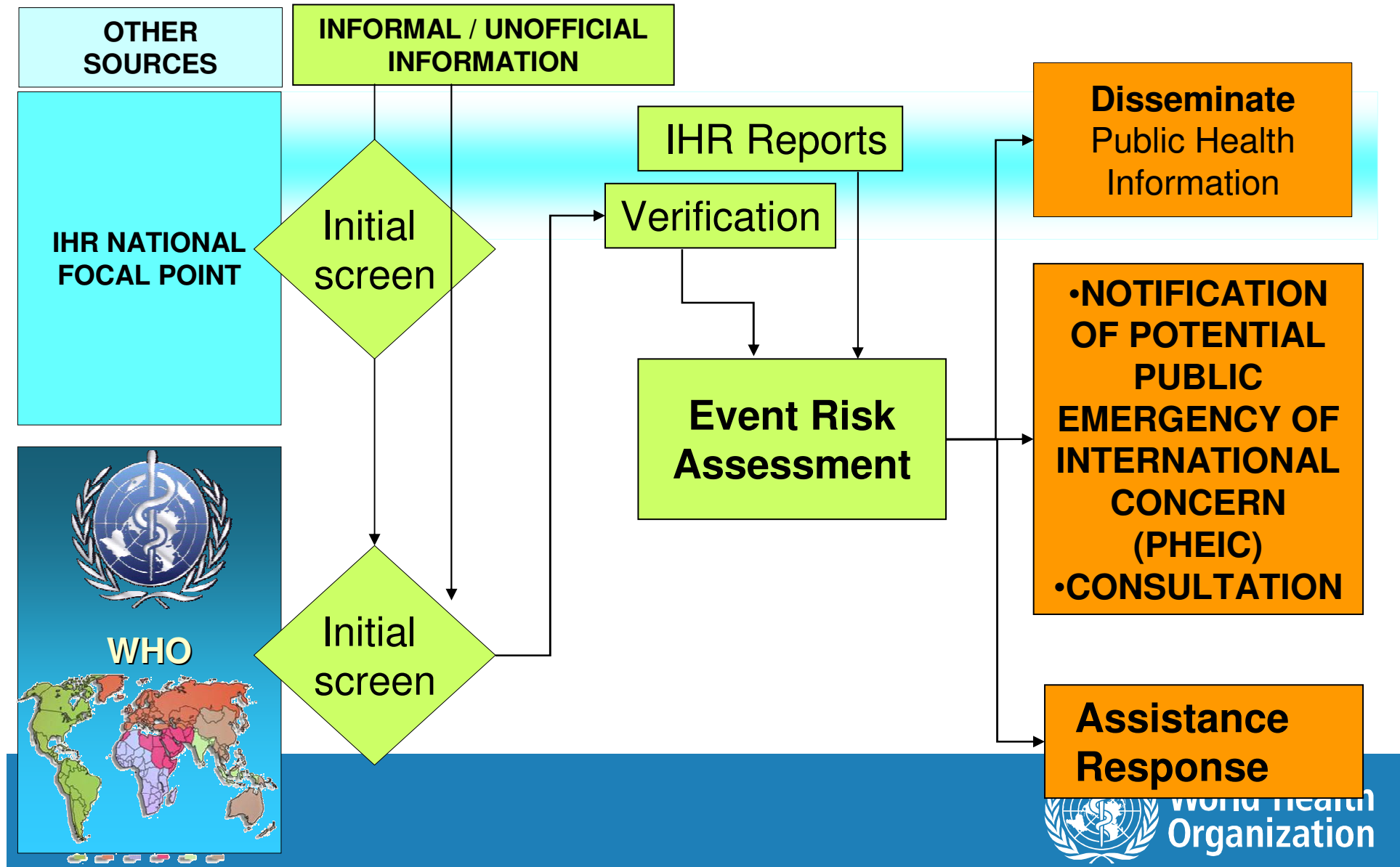
**NOTIFICATION TO WHO**

# IHR(2005) Decision instrument

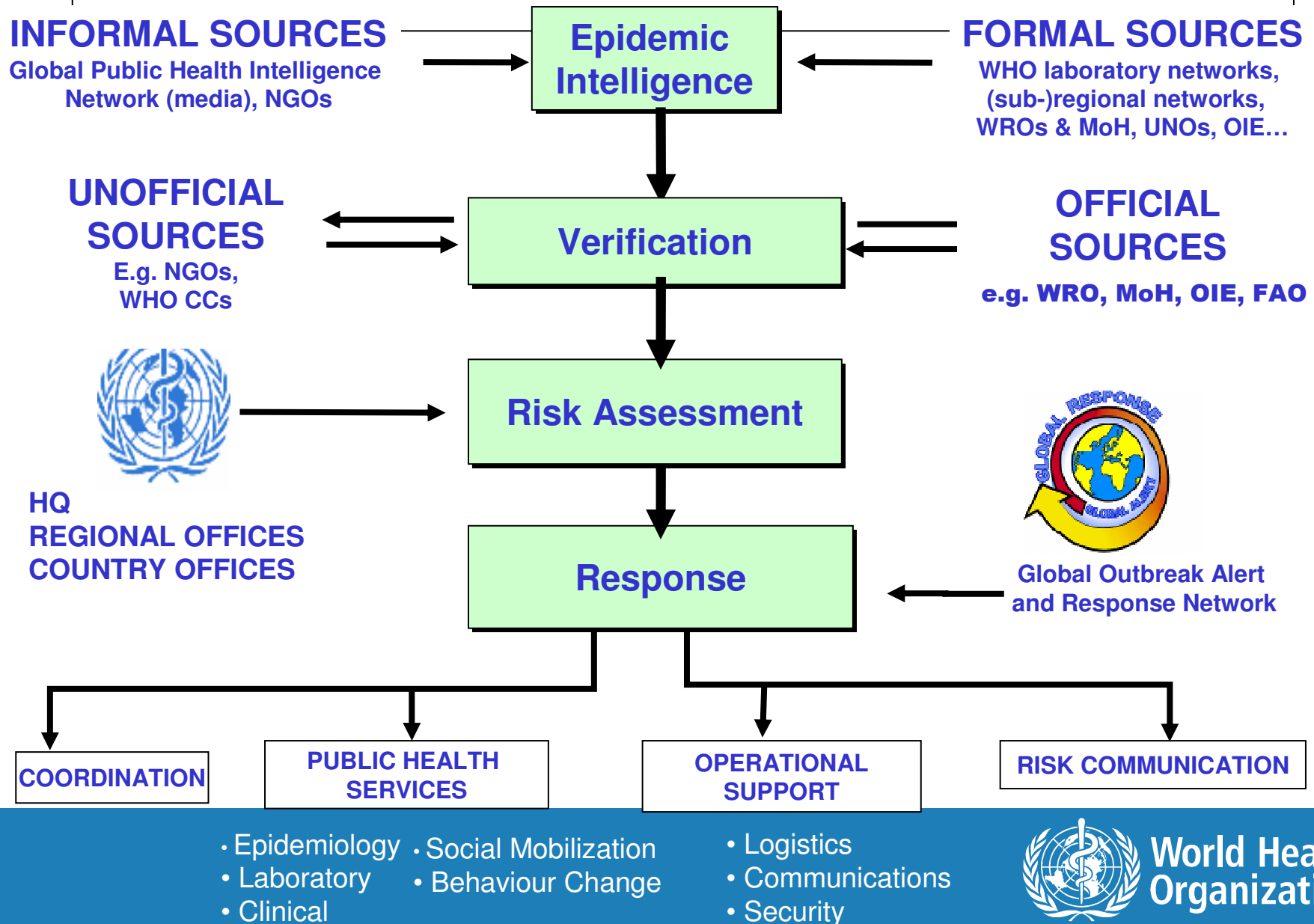
## 4 CRITERIA FOR RISK ASSESSMENT



# The Role of NFP and PAHO/WHO

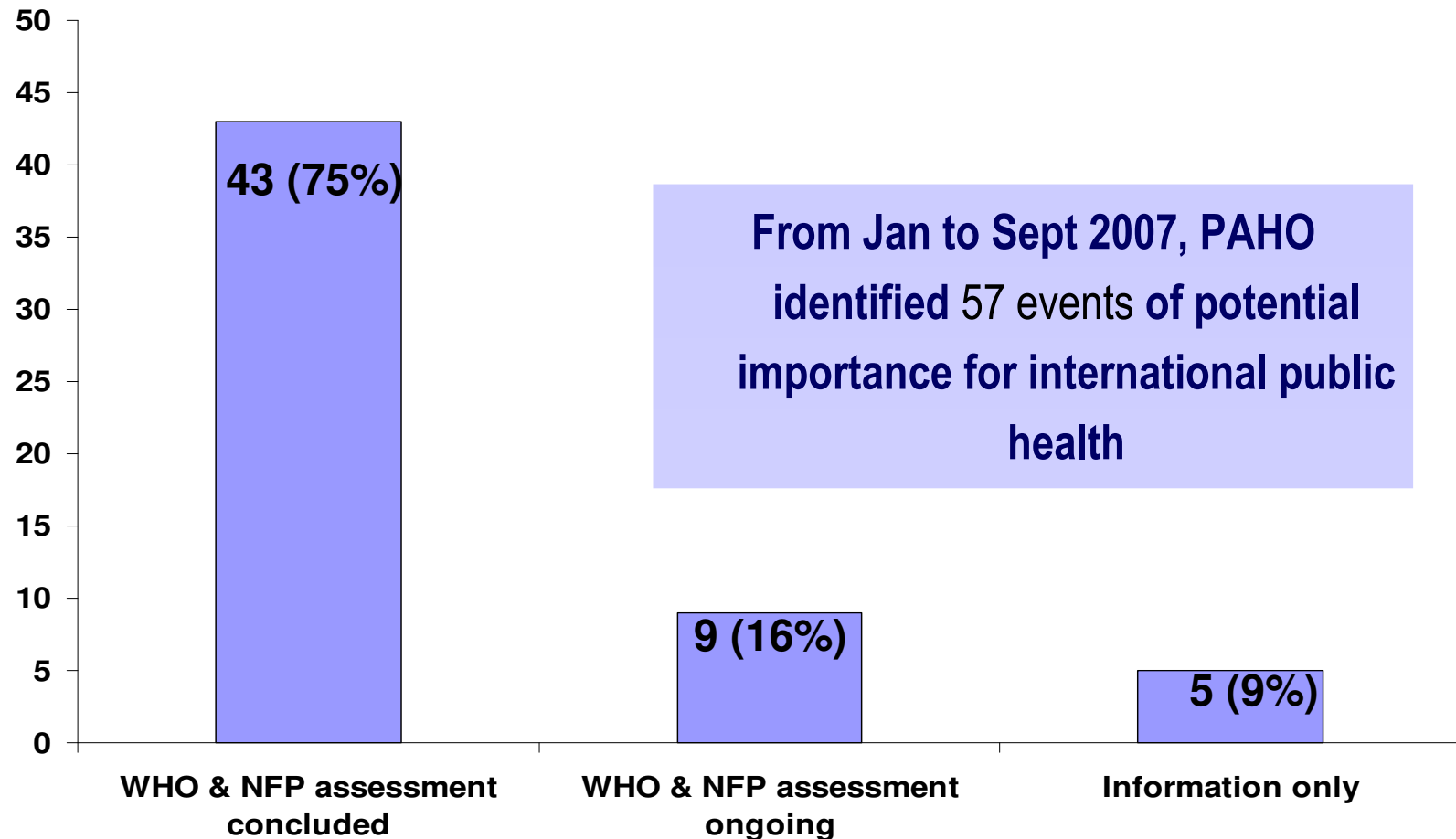


# The Role of PAHO/WHO



# What Countries Must Do: **National Focal Point**

## ► **Activity from January 2007 to September 2007**



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# What Countries Must Do: **National Core Capacities**

- ▶ **Core capacities for surveillance and response**
  - ▶ **3 levels: National, Intermediate, Local**
  - ▶ **Detection, verification, evaluation,**
  - ▶ **All type of events**
  - ▶ **Report to WHO**
  - ▶ **Response**
- ▶ **Core capacities at Points of Entry**
  - ▶ **Detection, verification, evaluation,**
  - ▶ **Ports, airports, ground crossings**



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## Areas of work for IHR implementation

GLOBAL PARTNERSHIP		
1	Foster global partnerships	WHO, all countries and all relevant sectors (e.g. health, agriculture, travel, trade, education, defence) are aware of the new rules and collaborate to provide the best available technical support and, where needed, mobilize the necessary resources for effective implementation of IHR (2005).

### ▶ Other Intergovernmental organizations

e.g. **FAO, OIE**, ICAO, IMO, UNWTO ...

### ▶ Development agencies

e.g. AFD, CIDA, DFID, JAICA, USAID, ADB, ASEAN, EC, MERCOSUR, WB ...

### ▶ WHO Collaborating Centres and Technical partners

International Networks / National agencies / NGOs: e.g. GOARN, IANPHI, Pasteur IN, MSF, TEPHINET, GEISS, CDC, ECDC, HPA, InVS ...

### ▶ Industry associations e.g. ACI, IATA, ISF, ISO ...

STRENGTHEN NATIONAL CAPACITY		
<b>2</b>	<b>Strengthen national disease surveillance, prevention, control and response systems</b>	Each country assesses its national resources in disease surveillance and response and develops national action plans to implement and meet IHR (2005) requirements, thus permitting rapid detection and response to the risk of international disease spread.
<b>3</b>	<b>Strengthen public health security in travel and transport</b>	The risk of international spread of disease is minimized through effective permanent public health measures and response capacity at designated airports, ports and ground crossings in all countries.

- Ports
- Airports
- Ground crossings

***23 of 66 articles and 8 of 9 annexes directly address travel, trade, and transport.***

- Health system
- Epidemiology
- Laboratory
- Preparedness
- Case management
- Infection control
- Social mobilisation
- Communication
- ...

## STRENGTHEN NATIONAL CAPACITY

2

**Strengthen national disease surveillance, prevention, control and response systems**

Each country assesses its national resources in disease surveillance and response and develops national action plans to implement and meet IHR (2005) requirements, thus permitting rapid detection and response to the risk of international disease spread.

- ▶ **A commitment of countries** (e.g. National budget line)
- ▶ **Build on existing national and WHO regional strategies** for surveillance and response

e.g. National Pandemic Preparedness Plans

- ▶ Direct support from **WHO Regional Offices**
- ▶ Technical guidance from **WHO Offices** and **WHO Collaborating Centres** e.g. CDC, NIH, Universities ...



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# June 2007 – June 2009

## Assessing Public Health Resources



Surveillance and response capacity

- **Early warning and detection systems** (information, communications etc)
- **Human resources** (rapid investigation teams, surveillance officers, ...)
- **Equipment and drugs** (PPEs, sampling materials, drugs, stockpiles)
- **Who's doing what and where** (NGOs, government, private )



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# June 2009 – June 2012

## Implementing national action plans



### Surveillance and response system

- Investigation/response team
- Safe transport of specimens
- Reference laboratory
- Laboratory EQA programme
- Epidemiology & data analysis
- Risk assessment
- Case management
- Communication
- Social mobilization
- **Inter-sectoral collaboration**



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3

**Strengthen public health security in travel and transport**

The risk of international spread of disease is minimized through effective permanent public health measures and response capacity at designated airports, ports and ground crossings in all countries.

► **At all times**

**(Annex 1B)**

- Access to medical service
- Transport of ill travellers
- Inspection of conveyances  
(e.g. Ship Sanitation Control Certificate)
- Control of vectors / reservoirs

► **For responding to events**

- Emergency contingency plan
- Arrangement for isolation (human, animal)
- Space for interview / quarantine
- Apply specific control measures



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## PREVENT AND RESPOND TO INTERNATIONAL PUBLIC HEALTH EMERGENCIES

4

**Strengthen WHO global alert and response systems**

Timely and effective coordinated response to international public health risks and public health emergencies of international concern.

5

**Strengthen the management of specific risks**

Systematic international and national management of the risks known to threaten international health security, such as influenza, meningitis, yellow fever, SARS, poliomyelitis, food contamination, chemical and radioactive substances.

- Influenza
- polio
- SARS
- smallpox
- cholera
- meningitis
- yellow fever
- food safety
- chemical safety
- radionuclear safety
- ...

- Intelligence
- Verification
- Risk assessment
- Response (GOARN)
- Logistics
- ...



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## PREVENT AND RESPOND TO INTERNATIONAL PUBLIC HEALTH EMERGENCIES

4

**Strengthen WHO global alert and response systems**

Timely and effective coordinated response to international public health risks and public health emergencies of international concern.



Initial Screening

Verification with  
Member States

Risk Assessment

Response Strategy and Operations



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# IHR Communications

"Shall be accessible at all times" (Art. 4)

## IHR National Focal Point



WHO  
Regional  
Office

- ▶ Notification
- ▶ Consultation
- ▶ Verification

## WHO IHR Contact Point



Designated  
national  
institution

**EMS**  
Event Management System

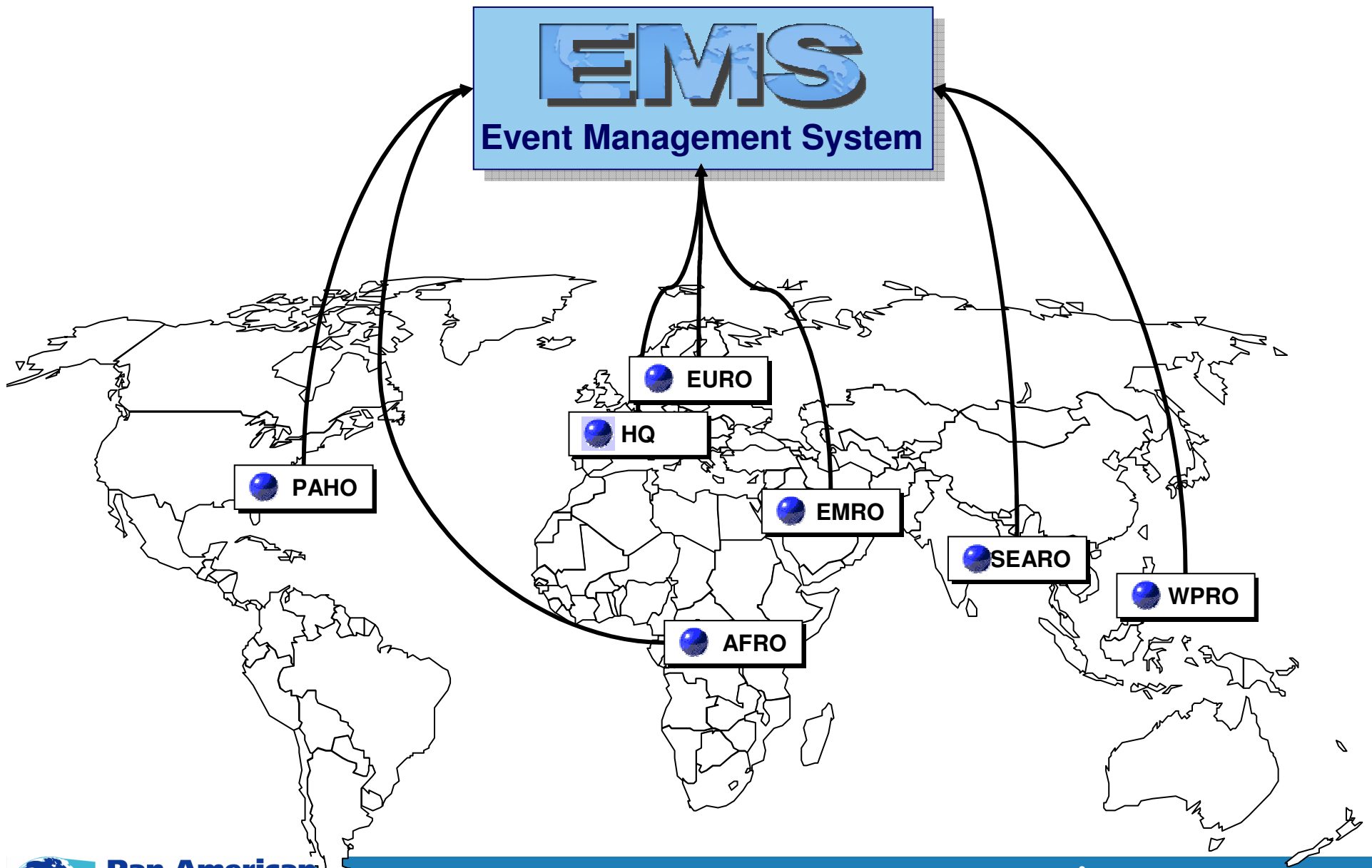


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# EMS

## Event Management System

## WHO Portal

WHO Intranet - Microsoft Internet Explorer provided by WHO

Address: http://intranet.who.int/

### Event Management System

Enter Text SEARCH

**EVENTS**

China, Hong Kong SAR  
Disease: Severe Acute Respiratory Syndrome  
Response in Progress - Regional Office

EVENT ID: 610-SY02-CN  
Current Status: Verified  
CONFIDENTIAL

Event Summary | Surveillance & Verification | Contacts | Response | Logistics | Team Deployment | Budget & Costs | History

**Event Group: SARS PANDEMIC**  
**Latest update - 22-02-2003**  
Incoming info: 24 health care workers within one hospital have developed acute respiratory syndrome, of whom 3 have developed pneumonia, each after caring for a patient hospitalized with pneumonia. The index patient died 30-Mar-2003 and reportedly travelled from Guangdong province to Hong Kong prior to being hospitalized.  
(Source - WHO)

**Criteria for Concern:**  
Unknown Disease  
International Assistance Required  
High Mortality / Morbidity  
International Disease Spread  
Effect on Travel / Trade

Cases: 1621  
Deaths: 179

**Initial Report**  
Date: 12 Mar 2003 Source: Media / GPHN  
Reported At: Severe Acute Respiratory Syndrome  
Outbreak Type: Human

**Recent Documents**

- 12 Mar 2003 WHO SARS Guidelines (pdf)
- 10 Feb 2003 WHO Response Kick-Off Presentation (ppt)
- 8 Feb 2003 Field Team Contact List (xls)
- 2 Feb 2003 WHO Response Kick-Off Presentation (ppt)
- 2 Feb 2003 WHO Press Release (ppt)

**Tasks**

- Follow up with Dr. Oriental Hsiao (assigned)
- Review GONR CV's (assigned)

**Activities**

- Create a response team roster.
- Create a TOR for response team member.
- Send an alert to all critical event contacts.
- Create an obligation request.

**Events Linked By Transmission**

- 610-SY02-CN Singapore Severe Acute Respiratory Syndrome (source)
- 610-SY02-CN Vietnam Severe Acute Respiratory Syndrome (transmitted to)
- 610-SY02-CN Cambodia Severe Acute Respiratory Syndrome (transmitted to)

Local intranet

## Member States

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### IHR 2005 Event Information

Logged in as User Name | Log Out

Current Events

Print List | Print Page | Add to Favorites | Help

**Current Events**  
Introductory text

Latest Update | Hazard | Country | Syndrome | Disease Condition | Date Initially Reported | Verification Status | IHR Status

Updates to Past Events

Latest Update | Hazard | Country | Syndrome | Disease Condition

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Done

## Operations

GOARN Global Outbreak Alert and Response Network

Weekly Outbreak Verification List Events (07th March 2003)

CHINA (CN)  
Last News: 24 Mar 2003  
Disease: SARS  
Status: Confirmed  
Case of 1st: 27-10-2002

Event Name	Country	Status	Date of IHR
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002
Severe Acute Respiratory Syndrome (SARS)	China	Confirmed	27-10-2002



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# IHR Event Information Site for NFPs

عربي | 中文 | English | Français | Русский | Español



## Event Information Site for IHR National Focal Points

Welcome **Tom Grein** [ [Logout](#) ]

[Print Page](#) [Add to favorites](#) [Help](#)

### Current Events

#### Current Events

#### All Events

This site has been developed by WHO to facilitate secure communications with the IHR National Focal Points (NFP) as part of the implementation of the International Health Regulations (2005).

Information on this site is provided by WHO to National Focal Points, in confidence, as specified in Article 11.1 of the IHR (2005).

### Current Events

This section lists ongoing events which are currently being assessed against the criteria for public health risks of international importance under the IHR (2005).

Click an event's **Updated** link to see the current risk assessment and most recent updates for the event.

Updated	Country	Hazard	Syndrome	Disease	Information Received	IHR Status
<a href="#">2007/08/21</a>	Democratic Republic of the Congo	Infectious		Poliomyelitis, acute paralytic, wil...	2006/05/18	Public Health Risk (PHR)
<a href="#">2007/08/20</a>	Indonesia	Infectious	Acute Respiratory Syndrome	Influenza due to identified avian o...	2005/07/13	Public Health Risk (PHR)
<a href="#">2007/08/17</a>	Comoros	Infectious		Cholera	2007/06/27	Public Health Risk (PHR)
<a href="#">2007/08/17</a>	Uganda	Infectious		Marburg Haemorrhagic Fever	2007/07/31	Public Health Risk (PHR)

Total number of items : 4

### Updates to Past Events

This section displays events that no longer represent a risk to international public health, but for which new information or

### Announcements

**2007/08/17**  
[Updated list of IHR NFP contact details 17 August 2007](#)



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**ALERT & RESPONSE – DAILY SUMMARY – 05 September 2007**

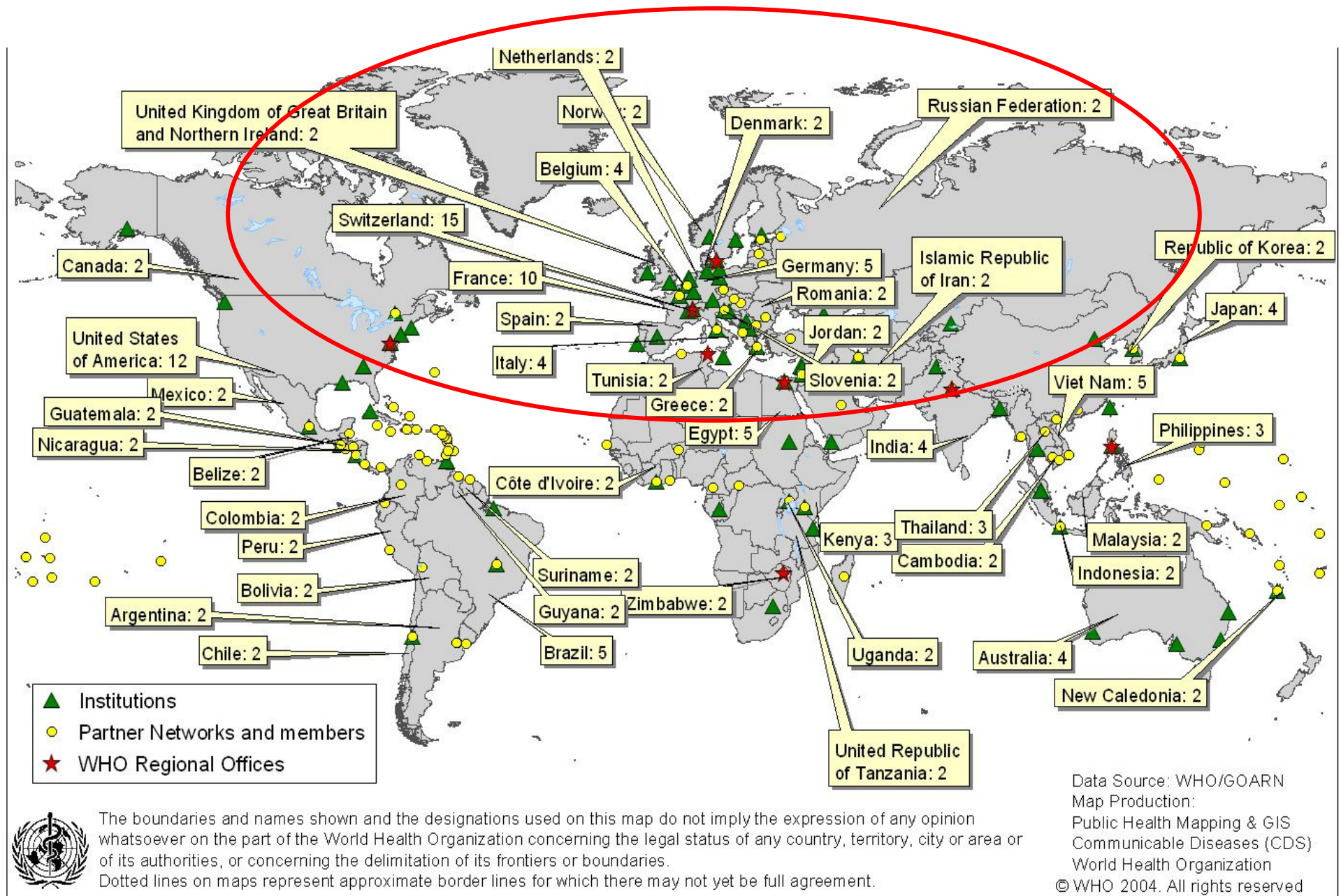
Department of Epidemic and Pandemic Alert and Response (EPR)

World Health Organization (WHO), Geneva, Switzerland

**WHO INTERNAL WORKING DOCUMENT; CONFIDENTIAL - NOT FOR FURTHER DISTRIBUTION****Verification requested from NFP**

Hazard/Disease/Syndrome	Location - onset - Epidemiological data	Decision and action	Publications
Hazard: FOOD SAFETY Syndrome: N/A Disease: N/A Aetiology: L. MONOCYTOGENES Event ID 2007-E-2802  INITIAL REPORT: National Governmental agency - not IHR NFP FSNET 28-Aug-2007	UNITED STATES OF AMERICA Georgia	<b>LAST INCOMING INFO</b> Follow up 28-Aug-2007 Further information requested from USA Infosan contact points (address of manufacturer, L. monocytogenes count)	<b>POINTS OF CONTACT</b> HQ: Jenny Bishop  RO: M. Libel
	<b>FIRST REPORT</b> VERIFIED cases: ; deaths : UNOFFICIAL cases: ; deaths :  <b>LAST UPDATE:</b> VERIFIED cases: ; deaths : UNOFFICIAL cases: ; deaths :  <b>NEW AFFECTED AREAS:</b>  <b>CONFIRMED BY:</b> LABORATORY: No	<b>SUMMARY INFO</b>  • 28-08-07 - Listeria monocytogenes was found in a sample of Ricotta Salata cheese collected as part of the department's food safety program. The contamination was found in a package marked SELL BY 01/21/08. The brand name of the cheese is Locatelli and the importer is The Ambriola Company, Inc., of Jersey City, New Jersey 07305. The cheese is imported from Italy. <b>ACTION</b> INFOSAN verification request sent to Italy <input checked="" type="checkbox"/>	Daily list: 28 Aug 2007 OVL: No (0) Web: No  Press release: No  <b>CRITERIA FOR INT.C.</b> • Serious Public Health Impact • Int. Disease spread
Hazard: UNDETERMINED Syndrome: ACUTE FEBRILE SYNDROME Disease: N/A Aetiology: N/A Event ID 2007-E-2799  INITIAL REPORT: News media (including all news)	INDIA Chakshyampur village in Baharia	<b>LAST INCOMING INFO</b> 24-Aug-2007 News: Four children of a family in Chakshyampur village in Baharia suffered from a mystery disease with high fever during the past 7 days, and 3 of them died in the past 2 days. Two of them died under the treatment. They were transferred from hospital to hospital seeking treatment. Their symptoms resembled those of viral encephalitis. The District Epidemic Team was sent. The pathology samples were taken for malaria and also sent to the Dept. of Microbiology at MLN Medical College.	<b>POINTS OF CONTACT</b> HQ:  RO: Khanchit Limpakamjanarat
	<b>FIRST REPORT</b> VERIFIED cases: ; deaths : UNOFFICIAL cases: ; deaths :  <b>LAST UPDATE:</b> VERIFIED cases: ; deaths : UNOFFICIAL cases: ; deaths :		Daily list: 24 Aug 2007  OVL: No (0) Web: No  Press release: No

# GOARN: Institutions and Partner Network

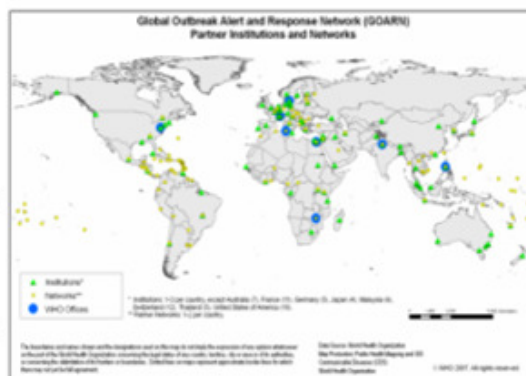


# GOARN

 World Health Organization[About GDARN](#) | [Workspaces](#) | [Resources](#) | [Contact us](#)

This site has been developed by WHO for the Global Outbreak Alert and Response Network to enhance secure communications and promote collaboration among partnering institutions and networks. This site provides timely information and regular updates on acute public health risks/events of international importance with the dual aim of enhancing operational readiness for GOARN response and facilitating access to the technical resources of GOARN institutions.

Protecting the confidentiality of sensitive information obtained via this site, is critically important to timely operational communications. Partners must ensure a high level of discretion when dealing with sensitive issues and are requested to contact WHO (email [goarn@who.int](mailto:goarn@who.int)) on any issue which raises concerns and before taking any independent action.



## Event name

- Acute Neurological Syndrome, unspecified, Bangladesh ! NEW
- Meningococcal disease, Indonesia ! NEW
- Poliomyelitis, acute paralytic, wild virus, imported, Australia ! NEW
- Salmonella infections, other , Slovenia ! NEW
- Cholera, Sudan ! NEW

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## OPERATIONS



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# GOARN WHO Support System

## Operational Support Team

GOARN management

Field epidemiology unit

## Logistics unit

Field logistics

Stockpiles

Logistics mobility unit (Dubai)

## Electronic tools

Event Management System (EMS)

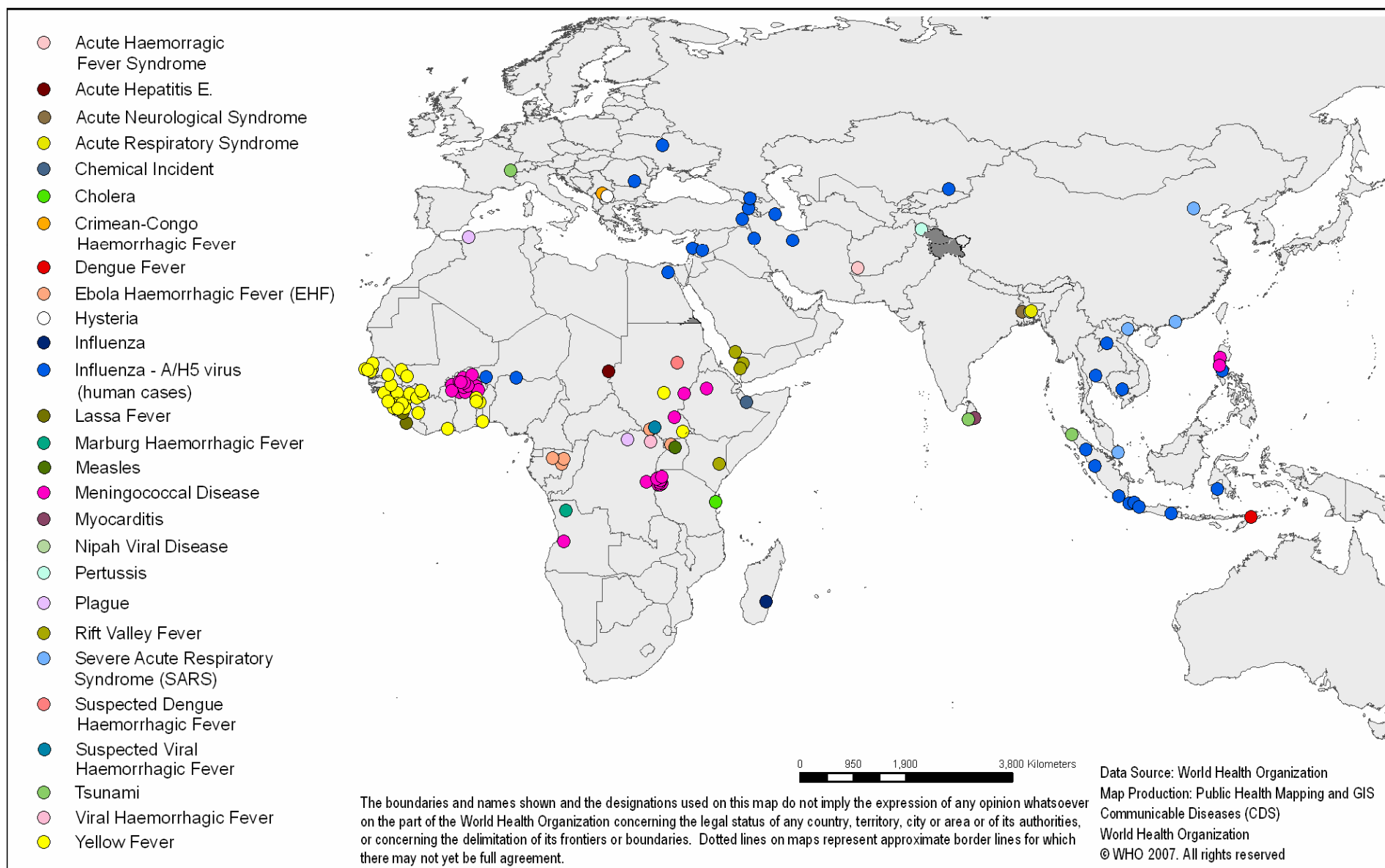
Field Information Management System (FIMS)

Early Warning Alert and Response System (EWARN)

## Strategic Health Operations Centre (SHOC)



# WHO/GOARN Outbreak Response Operations 2000-2007



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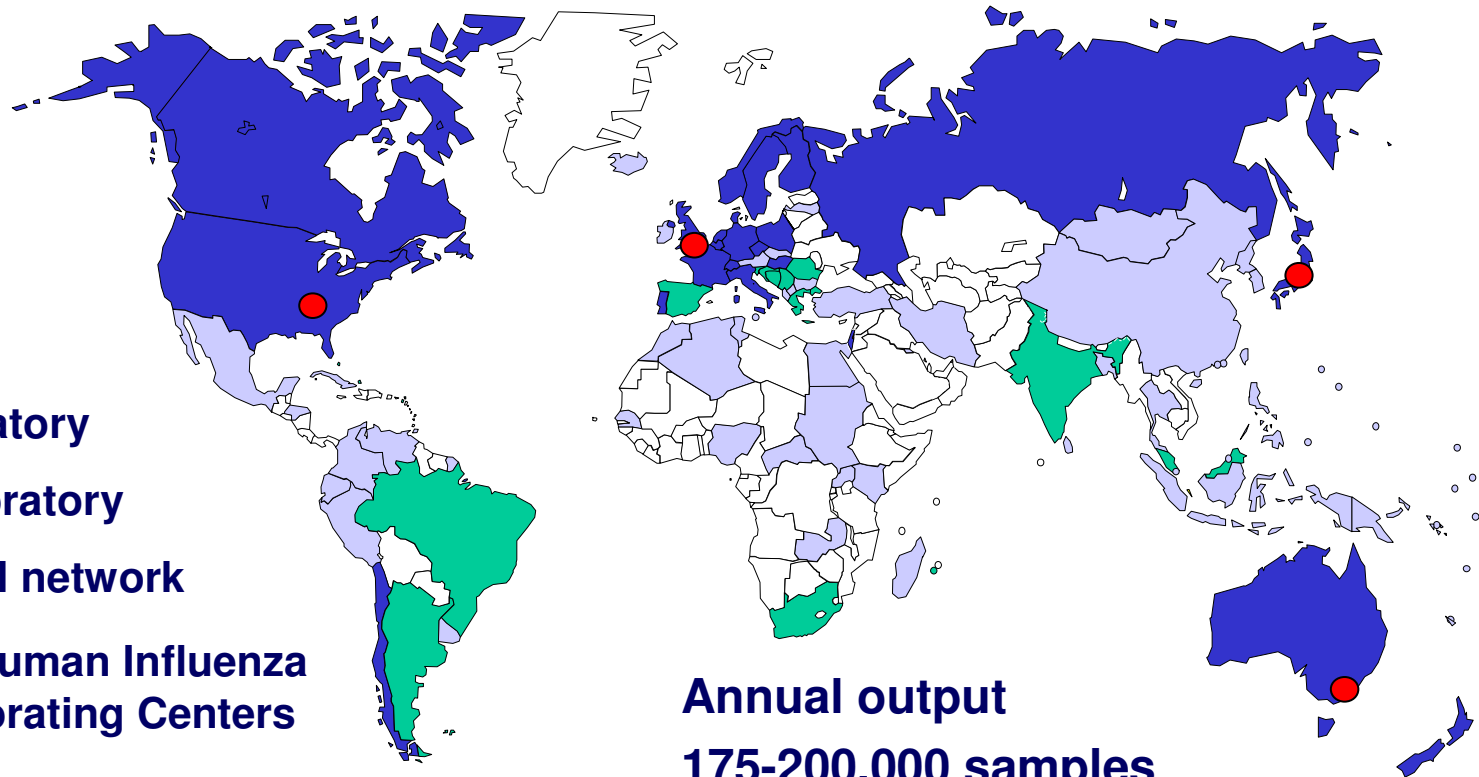
**5**

**Strengthen the management of specific risks**

Systematic international and national management of the risks known to threaten international health security, such as influenza, meningitis, yellow fever, SARS, poliomyelitis, food contamination, chemical and radioactive substances.

e.g. Global Influenza Surveillance Network

-  1 laboratory
-  ➤ 1 laboratory
-  national network
-  WHO Human Influenza Collaborating Centers



**115 National Influenza Centers (NIC) in 84 countries**

**Annual output**  
**175-200,000 samples**  
**15-40,000 isolates**  
**2-6000 viruses characterized**

# Strengthen threat-specific control programmes

- *Anthrax*
- *Anti-microbial resistance*
- *Arboviruses (e.g. Rift valley fever, West Nile fever)*
- *Chemical Safety*
- *Cholera and other epidemic diarrhoeal diseases*
- *Dengue*
- *Food safety*
- *HIV/AIDS*
- *Influenza (seasonal, avian, and pandemic threat)*
- *Malaria*
- *Measles and other vaccine-preventable diseases*
- *Meningococcal meningitis*
- *Poliomyelitis eradication initiative*
- *Radiation and environmental health*
- *Smallpox*
- *SARS and other severe acute respiratory infections*
- *Tuberculosis*
- *Yellow Fever*
- *Viral haemorrhagic fevers (e.g. Ebola, Marburg, Lassa)*
- *Zoonoses*

► **> 95% of  
day-to-day  
threats to  
international  
health  
security !**

... / ...

LEGAL ISSUES AND MONITORING		
<b>6</b>	<b>Sustain rights, obligations and procedures</b>	New legal mechanisms as set out in the Regulations are fully developed and upheld; all professionals involved in implementing IHR (2005) have a clear understanding of, and sustain, the new rights, obligations and procedures laid out in the Regulations.
<b>7</b>	<b>Conduct studies and monitor progress</b>	Indicators are identified and collected regularly to monitor and evaluate IHR (2005) implementation at national and international levels. WHO Secretariat reports on progress to the World Health Assembly. Specific studies are proposed to facilitate and improve implementation of the Regulations.

- ▶ **IHR Roster of Experts**
- ▶ **Emergency Committee**
- ▶ **Review Committee**
- ▶ **Progress report to the World Health Assembly**

# Main Challenges

- ▶ **National and international awareness**
- ▶ **Playing “the game” or not...**
- ▶ **Intersectoral collaboration**
  - Health, Agriculture, Education, Defence, Transport, Trade
- ▶ **Resource mobilization**
  - Countries (national budget) with initial support from bilateral donors, WHO, foundations, private sector, ...
  - “Rich” countries supporting the “poor” countries...



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# Thank you

[\*www.who.int/ihr\*](http://www.who.int/ihr)  
[\*www.paho.org\*](http://www.paho.org)

*Kamel Senouci, MD, MSc*

*Health surveillance and disease management, Communicable diseases  
Epidemic Alert and Response Team, IHR regional focal point  
Pan American Health Organization / World Health Organization*



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